App. No. 10/761,081
Office Action Dated November 17, 2005

REMARKS

Favorable reconsideration of this application is requested in view of the above amendments and the following remarks. Claim 9 is hereby amended. No new matter has been added. Claims 9-12 are pending. The amendment of claim 9, reciting "after forming the bonding pad" and "including an outer interface thereof." is supported by Figures 5 to 9, for example.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al. (US 2002/0022301) in view of Chen et al. (US 2003/0013291). Applicant respectfully traverses this rejection.

The rejection contends that the reference shows a "combined intermediate and pad layer 108" in interpreting the reference to meet the present claims. There is no basis in the reference for this arbitrary division of element 108, and therefore the rejection is using an improper and hind-sight based interpretation. Moreover, claim 9 requires steps of forming an intermediate layer and forming a pad layer on a surface of the intermediate layer. Even if the element 108 of the reference could be considered a "combined intermediate and pad layer" from a "product" viewpoint, the reference clearly neither discloses nor suggests the steps required by "method" claim 9.

As noted above, Kwon does not disclose the formation of an intermediate layer and bonding pad required by claim 9. Therefore, Kwon et al. also does not disclose forming an insulating film covering the edges of the bonding pad and the intermediate layer including an outer interface thereof as required by claim 9. Again, the relevant structure of Kwon et al. only has two layers, an electrode layer and a TiW layer (Fig. 6), not an electrode layer, intermediate layer and bonding pad layer.

Further, the invention of claim 9 requires a process step of patterning two structures at the same time, "forming a pad layer to be a bonding pad on a surface of the intermediate layer and patterning the intermediate layer and the pad layer after forming the pad layer." In contrast, Kwon et al. only teaches forming the layers of the semiconductor package one structure at a time. (Figures 5-9). One of the advantages of patterning the structures in a manner as

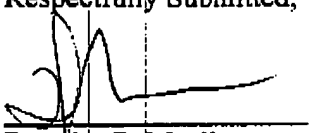
required by claim 9 is to improve process efficiency. See page 10, lines 21-24 of the Specification, for example, (the metal layer is etched using the resist pattern as a mask, and the lower layer is etched using the metal layer as a mask).

Even further, Kwon et al. does not disclose the formation of the passivation film after the bonding pad is formed as required by claim 9. Rather, Kwon et al. teaches the formation of an insulating film right after the formation of an electrode pad, with the metal layer as a final step. Figures 5-9. As can be seen from these figures, the process steps of forming the electrode pad, the insulating film and the intermediate pad are done separately and sequentially and therefore are distinct from the method of claim 9.

The rejection further relies on Chen et al. for the teaching of BCB polymer resin used as a passivation material. However, Chen et al. teaches that such a resin has been used in a case where the "under bump metallurgy" is deposited on the passivation material, and in fact teaches that there are problems with the reliability of the use of the resin in such circumstances. See paragraphs [0022-3]. Chen et al. does not suggest the use of the passivation film to cover the patterned edges of the pad layers as required by claim 9. Hence one with ordinary skill in the art would not look at Chen et al. for the teaching of using a resin to cover the edges of the patterns of the intermediate and metal bonding pad. For at least these reasons, claim 9 and claims 10-12 are allowable over Kwon et al. and Chen et al., taken separately or in combination. Favorable reconsideration of claims 9-12 is requested.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions regarding this communication can be directed to the undersigned attorney, Douglas P. Mueller, Reg. No. 30,300, at (612)455-3804.

Respectfully Submitted,



Dated: March 14, 2005

Douglas P. Mueller
Reg. No.: 30,300
Hamre, Schumann, Mueller & Larson, P.C.
Suite 2650, 225 South Sixth Street
Minneapolis, MN 55402
612.455.3800

DPM:unt